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ABSTRACT

Emerging videotex news services--systems for distributing textual information on television screens that permit direct competition with pulp newspapers--are presently rooted in a limited theory of newsreading. The first of two rival theories of newsreading applicable to electronic newspapers is "uses and gratifications" research--the belief that the audience is active and that an important part of mass media use is goal directed. Such research, however, ignores the possibility that newspapers are read for pleasure and for no ulterior purpose and suggests that the adaption of work-related, task-oriented storage and retrieval systems to videotex newspapers is theoretically appropriate. A second newsreading theory, the ludenic theory, asserts that the process of newsreading is intrinsically pleasurable, and that pleasure is at the root of both mature, highly ritualized newsreading as well as more casual, unstructured newsreading. On the surface, an electronic newspaper with countless information retrieval options would seem to embrace the concepts of selectivity and apperception inherent to pleasure reading, but the "true" ludenic electronic newspaper would consist of a number of information items strung together electronically in a manner that enhances the newsreading of an audience segment. The key to successful development of electronic newspapers is development of forms consistent with the type of play that characterizes such newsreading. True ludenic newsreading cannot be transformed into a task-oriented drudgery of data base manipulation and intricate information-recovery protocols. (HTH)

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Theory and Methodology Division

(Communication Technology Session)

RIVAL THEORIES OF NEWSREADING IN THE ELECTRONIC NEWSPAPER ARENA

by

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The purpose of this paper is to explore theories of newsreading in the context of "electronic newspapers." The basic argument put forth is that emerging videotex news services -- as designed by such communication giants as Bell Telephone, the Knight-Ridder chain, Reader's Digest, CompuServe and others -- are presently rooted in a limited theory of newsreading, to the degree that they are theory based at all.

Before examining newsreading theory in this context, the "electronic newspaper" requires some description. The electronic newspaper is here defined as any system for distributing textual information on TV screens, where shelf life and manipulability of information permits direct competition with pulp newspapers. To compete directly with pulp newspapers, the shelf life of much of the information must be relatively brief (less than 24 hours). While information of a more enduring usefulness might be offered by videotex systems, such information competes with media other than newspapers. Manipulation of information shouldpermit the newsreader to actively select subsets of information from the larger textual package in "real time." [1] Thus, continuous scrolling of textual information on a TV screen, which Lowenstein has categorized as "rotatext," is viewed as fundamentally different from newsreading, where the reader can "scan" and "skip about" at will among the content choices of the newspaper.[2]

This interactive character of the electronic newspaper can be achieved through viewdata systems[3] or teletext systems.[4] What's key is the ability to display a subset of the available

information at will on the screen, through an active reader's choice.

Contrasting Pulp Newspapers and Electronic Newspapers

The emerging electronic newspaper has been the focus of excited scholarly discussion in recent years. Parker's early (1971) scenario of the electronic newspaper provides a useful preview of now-emerging information utilities:[5]

> A fantasy trip into the future may give a feeling for such a communication medium. Sitting at the breakfast table, you might cause the latest headlines to appear on a small display screen simply by touching a key. These headlines may have been written five minutes before. Pointing at a headline might get the story displayed. ...Suppose you encounter a name of a person you would like to know more about: ask for a bibliographic sketch. Suppose you do not completely understand the economic reasoning behind an action of the International Monetary Fund: there might be available a short tutorial on some aspect of international economics.... Suppose you want to search the want ads or supermarket ads. Instead of shuffling pages, you may just ask to have displayed ads in a particular category... Suppose a high school student wishes to search the equivalent of the local public library for information needed to write a term paper. He can quickly search the equivalent of the card catalog and soon be browsing in relevant material.

The emergence of the electronic newspaper draws momentum from inherent problems of pulp newspapers. These problems are perhaps best summarized by Smith.[6] The modern American newspaper has a highly computerized news gathering and news editing "front shop."[7] Vast quantities of textual information of short shelf life are gathered and edited on video display terminals (VDTs). Most of such textual information

(about 90%) is not used.[8]

The key bottleneck for pulp newspapers is the printing press and systems for distributing to homes of newsreaders. Some major newspapers have developed complex systems of zoning, micro-zoning, tailoring, and sectioning in order to distribute subsets of the collected and edited information to ever smaller, homogenous audience segments.[9] These efforts by cumbersome pulp newspapers herald what Toffler argues is the "de-massification" of the mass media.[10] Smith views this effort as an attempt to provide the newsreader with a paper made up of information most directly relevant and useful to the reader. Such individualization of the newspaper provides advertisers with narrowly-defined audience segments while reducing distribution of newsprint that isn't read. This process may be called micro-segmentation.

The electronic newspaper completely alters the production and distribution dilemma of the pulp newspaper. Given the capacity to address specific textual information packets to specific newsreading households, the electronic newspaper is -- in principle -- completely individualized. Once textual information is stored in a machine-readable form, one challenge for videotex systems is to provide access to that information to individual newsreaders in a reasonable time frame. To view the electronic newspaper as simply an information storage and retrieval system, however, ignores important characteristics of newsreading. This point is developed below.

Other differences differentiate the pulp newspaper from the electronic newspaper. Pulp newspapers are portable; electronic

newspapers are locked inside TV sets connected to cable or phone lines.[11] Perhaps more significant, the pulp newspaper facilitates the "scanning" of news, as the newsreader skips from one part of the newspaper to another, reading a headline here or a lead paragraph there. All this selectivity is under the easy control of the reader. The electronic newspaper, on the other hand, displays information in screen "pages" consisting of about 50-70 words. Once a screen is read, the reader signals the videotex system that another page is desired. Strategies for what happens next need to be rooted in a theoretical understanding of the newsreading process. To discuss the theoretical implications of reading the electronic newspaper, a detailed understanding of current videotex system designs is required.

Current Videotex Designs

A number of studies are underway in the United States to evaluate the potential of videotex services and electronic newspapers.[12] A major problem for scholars of communication is that most of such research is conducted under corporate wraps. We are not privy to much of the empirical data collected on newsreader responses to electronic newspapers.[13]

Most emerging systems, however, tend to follow similar design strategies. Such systems are generally menu-driven information storage and retrieval systems. The newsreader is initially confronted with a "master menu," a screen page (or pages) which lists topics of information services in the most general terms. The newsreader presses a key corresponding to the item number

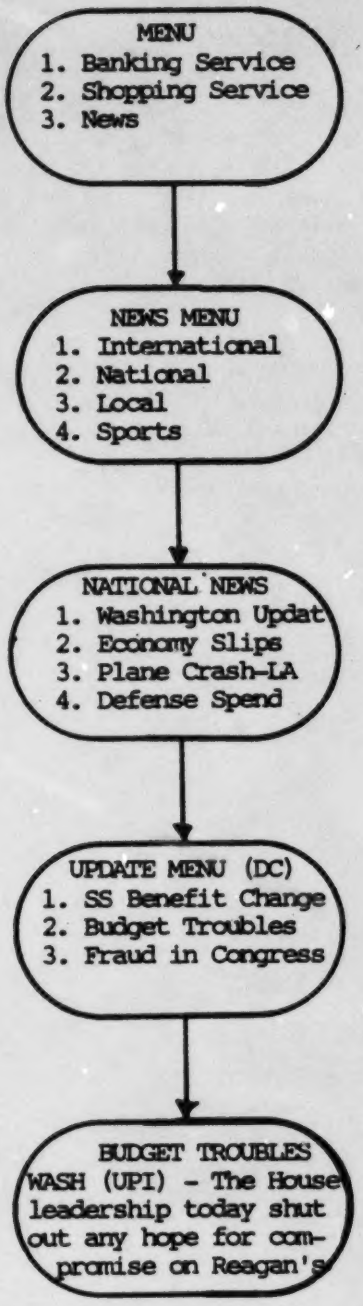
on the master menu screen. The master menu disappears from the screen, to be replaced by a second menu listing specific topics that fall under the more general category selected on the master menu. The newsreader selects a topic from the second menu by pressing the proper key, which causes the second menu to disappear and a third, yet-more-specific menu to appear. The number of topic menus searched depends on the particular system studied, but the number of menus increases with the volume of information stored.

In Figure 1, this process is detailed for an imaginary news search on such a system. In Figure 2, a partial diagram for the various menus of the CompuServe videotex service is displayed.[14] Table 1 provides an index of the information topics and services available on the CompuServe system. The sheer mass of this index implies special problems for newsreading. Videotex computer software is modeled after various information storage and retrieval systems that have been available in the work place for many years. One illustrative example of such a work-related system is the ERIC service, a computerized storage and retrieval system containing bibliographic references for a number of published and unpublished documents related to reading, English, journalism, speech, theater, mass media and general communication skills.[15] While ERIC's computerized search procedures are different from those of menu-driven electronic news services, a series of common assumptions are shared:

1. Active Information Seeker -- ERIC searches, like other work-related information storage and retrieval searches, start with the assumption that the information sought serves some ulterior purpose. The system helps the user access some information, which is then put to some external

Figure 1.

An Imaginary News Search on a Videotex System



LEVEL 1

...Newsreader must first select news services from among a number of other videotex services... PRESSES 3

LEVEL 2

...First general categories of news. Newsreader must make a categorical choice from the major categories... PRESSES 2

LEVEL 3

...Within the third menu, the newsreader may begin to see very simple headlines... PRESSES 1

LEVEL 4

...Perhaps another menu with still more headlines to puruse and choose from... PRESSES 2

LEVEL 5

...Now the newsreader is within the textual portion of a selected news story. Additional pages are accessed through established protocol...

Figure 2.

Basic Design of the Menu Format for the CompuServe System

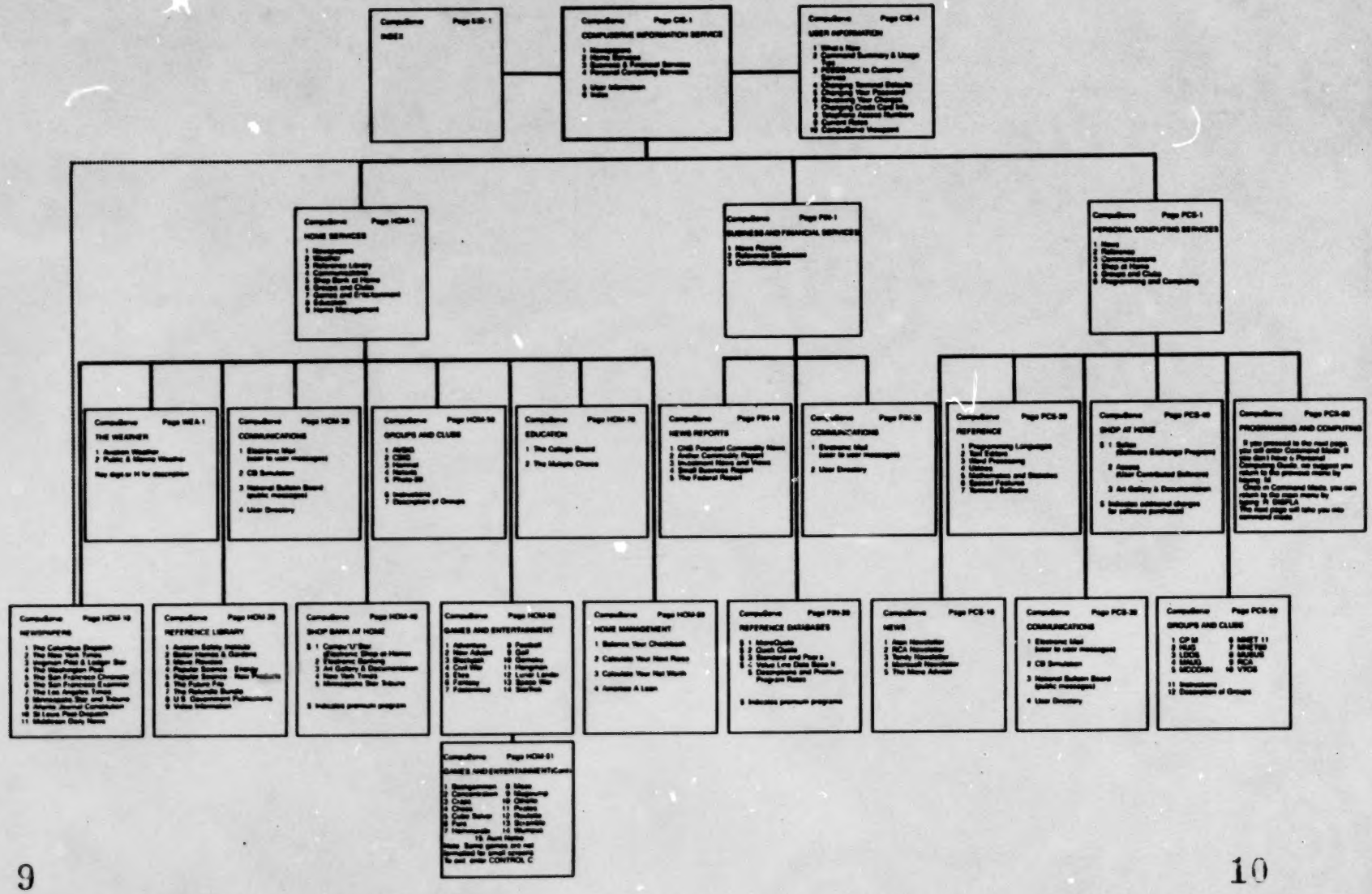


Table 1.

Listing of Information Topics Provided By CompuServe

use relevant to the user. The system does not assume that the information retrieval activities are an end in themselves.

2. Specific Information Sought -- ERIC searches, like other work-related searches of data bases, assume that the user knows more or less exactly what he or she is looking for. The user is expected to set parameters for searches. "Scanning" or "browsing" in a form akin to newspaper scanning or browsing is not faciliatated.

Such similarities between emerging electronic newspapers and work-related information storage and retrieval systems are not suprising. The computer environment lends itself well to the view that information is sought by an active reader, driven by some ulterior purpose or goal to seek information of a specific character or type. Indeed, one could view the electronic newspaper as providing general reader access to a currently-updated newspaper morgue. Such a view mirrors Smith's "electronic Alexandria," where the accumulated information wealth of the newspaper and its wire services are made available to the inquiring reader.[16] The electronic newspaper, when fully implemented, becomes like an electronic library with a constantly expanding wealth of instantly-updated information.

However, reading the newspaper is unlike going to the library, independent of transportation issues involved. If newspapers were read with the frequency with which people visit libraries, there would be no newspapers. To see how these information activities differ, we turn to theories of newsreading.

Rival Theories of Newsreading

Two rival theories of newsreading can be applied to the electronic newspaper. Application of these theories to electronic newsreading suggest alternative design strategies. The alternative designs serve then as potential experimental interventions in empirical tests of the rival theories.

The first theoretical perspective considered is uses and gratifications research. This theoretical perspective emerged as a powerful influence in mass communication research in the early 1970s, but its roots lie in theorizing that dates to the 1940s.[17] Components of the uses and gratifications perspective were spelled out by Katz, Blumler and Gurevitch.[18] The pivotal assumption of the perspective is the belief that the "audience is conceived of as active, that is, an important part of mass media use is assumed to be goal directed." [19] The authors proceed to make clear the theoretical distinction by contrasting the uses and gratifications perspective with Bogart's conclusions about media behavior among blue-collar workers that such "experiences represent pastime rather than purposeful activity..." [20]

The uses and gratifications perspective, then, starts with the very large assumption that media use, including newsreading, serves some ulterior purpose external to the communication behavior itself. As such, the research perspective suggests that people who read newspaers should be presented with lists of ulterior purposes that newsreading might serve, asking them to indicate which such purposes (gratifications sought) are served by their use of newspapers.

A number of factor analytic and other types of studies have been conducted of the various posited purposes served by media use of different media and different content within media.[21] Many uses and gratifications studies tend to be descriptive in nature. Uses and gratifications research has been sharply criticized on theoretical grounds, such that one discussant at a national scholarly convention urged that nails be driven into the coffin of uses and gratifications research.[22]

Towers provides a useful overview of difficulties in uses and gratifications research.[23] These difficulties involve selection of statements of posited media uses, problems of focal media of study, problems of gratifications sought vs. gratifications obtained, and problems with statistical analysis. These are problems, however, internal to the theoretical framework itself.

Other problems emerge when the basic assumptions of the perspective are called into question. These problems have to do with reactivity and normative characteristics of the data-collection context.

Suppose for the moment that newsreading, by and large, serves no ulterior purpose external to the newsreading experience itself for the individual reader. This is not to say that newsreading serves no larger purposes for society or culture nor does this imply that newsreading has no effects. This is simply to say that such larger social purposes and effects have little to do with why an individual, for the most part, reads a newspaper. Suppose you then ask such an individual to explain

what useful purposes his or her newsreading serves. The social situation demands that the respondent come up with a rational explanation for his or her behavior. That most respondents are accomodating, or that there is, in fact, underlying patterns to such reactive behavior, is no indication that the basic assumption of the uses and gratifications model has been meaningfully tested. Indeed, the underlying assumption of ulterior purpose to media usage is never tested in such research designs.

Another problem is the mixing of individual, psychological purposes with larger social purposes. Because mass media usage is generally presumed to play a role in social integration and the transmission of social values, a researcher can easily slip into reverse reification: treating the individual as if he or she were the collectivity. This is especially striking in Peled and Katz' study of uses and gratifications of media behavior in Israel during the 1973 war with Egypt and Syria: [24]

> "During the height of the fighting, 40% of the population called for television programs that would contribute to their feeling of pride in state and army, solidarity with the leadership, and so on."

That respondents should agree with such normative statements in times of stress is not suprising. Whether such responses illuminate much about media usage is open to question.

Returning to the electronic newspaper, uses and gratifications research suggests that the adaption of work-related, task-oriented storage and retrieval systems to videotex newspapers is theoretically appropriate. Presuming that the system user

is actively seeking specific content to gratify an ulterior purpose, then a menu-driven, general-to-specific retrieval system should be put to use by former pulp newspaper readers. Residual problems remain, which are related to initial resistance to the technology and knowledge of its proper use.[25] Ulterior purposes, however, provide the driving force behind goal-directed, information-seeking behavior using videotex systems.

Play Theory Reconsidered

When Katz, Blumler and Gurevitch contrasted the uses and gratifications perspective of ulterior purpose with Bogart's view of media use as a "pastime," they also set the perspective in sharp contrast with a prior theory of newsreading. That theory, the play or ludenic newsreading theory, was developed by Stephenson in the early 1960s and fully detailed in The Play Theory of Mass Communication in 1967.[26]

The ludenic newsreading theory asserts that the process of newsreading is intrinsically pleasureable, and that that intrinsic pleasure is at the root of both a mature, orderly, and highly ritualized form of newsreading as well as a more casual, spontaneous, and unstructured form of newsreading. According to theory, people who regard newspapers as information storage and retrieval devices used to accomplish certain tasks are non-pleasure readers who generally tend to be non-readers as well.[27]

Play consists of those activities that people perform for their own sake, for pleasure, for recreation, for hobbies and

for self-cultivation. [28] Stephenson agrues that work "deals with reality, with earning a living, with production. Play, on the contrary, is largely unproductive except for the self-satisfaction it provides." [29] Play is an "interlude in the day; it is voluntary and not a task or moral duty." Play is "disinterested" and while "attended to with seriousness, it is not really important." [30]

Regarding newsreading, Stephenson argues that the activity "has all the earmarks of play." [31] People volunteer to read newspapers, they become absorbed in the newsreading interlude, "satisfying in itself and ending there." [32] Some people are characterized as mature newsreaders, who treat their newsreading interlude as a formal game, following highly individualized paths through different sections of the newspaper. The newsreading interlude is highly ritualized. Pleasure newsreaders, on the other hand, engage in free form play during the newsreading interlude. These readers skip about with no particular ritual, reading fragments of the news here and there. These newsreaders see reading as entertainment, as a way to pass the time.[33]

With pulp newspapers, non-pleasure newsreaders also exist. Theoretically, these are non-readers who do not find newsreading absorbing or enjoyable. They use the newspaper to accomplish tasks, for sales information, for facts that serve purposes outside the newsreading interlude itself.[34] Such pulp newspaper users seem to serve as the videotex designer's model of the electronic newsreader.

Key concepts in the ludenic newsreading theory are convergent selectivity and apperception. Convergent selectivity involves

the individual selecting something for himself or herself in ways that make the product uniquely individual. Selecting options for a new automobile so that it is "customized" is an example of convergent selectivity. Newsreading is a process of convergent selectivity, whereby highly individualized rituals with the newsreading interlude "customize" the experience. Apperception is the characteristic of individuals to perceive only those aspects of a more complex situation that tie in with prior interests. Both concepts are important to the theoretical design of the electronic newspaper.

The Ludenic Electronic Newspaper[35]

On the surface, organization of the electronic newspaper as a gigantic data base (see Table 1) with countless information retrieval options would seem to embrace the convergent selective character of the newsreading interlude. This, however, reflects vulgar extrapolation of the concept to a new situation. The concept of convergent selectivity is properly relegated to the selection of a newspaper title from among a variety of electronic newspaper options. That is, rather than providing individual access to one massive (and forbidding) data base, the "true" ludenic electronic newspaper consists of a number of informational items strung electronically together in a manner that enhances the newsreading play of a particular audience micro-segment.

The exact characteristics of an electronic micro-newspaper would be determined by combined behavior of audience segment members and special advertisers, as well as electronic journalists

and editors. The addressability of many videotex systems removes from the electronic environment the distribution problems of pulp newspapers. Newsreaders of the artificially "mass" pulp newspaper audience, made mass by the pulp production and distribution demands, are set free to select for themselves from a number of electronic micro-newspaper titles.

Stephenson provided a number of suggestions to pulp newspapers to enhance play opportunities for readers. These suggestions are equally valid for the electronic newspaper. Stephenson suggested that newspapers "induce and encourage ... regularity, order and perspective" when a developed or mature audience is sought:[36]

> "The editor has to make his newspaper interesting; for some readers this can be achieved by primitive play conditions, such as are characterized more by a scattering of the mind than by well-developed absorption. Sophisticated newsreading is contemplative rather than scatterbrained."

Given the quantum reduction in production and distribution costs, convergent selectivity is served through micro-segmentation of the newspaper readership. This flows from the technical flexibility to produce an electronic micro-newspaper title, using minimal staff who can access various machine-readable data bases. These pieces of information are then assembled -- "edited" in the precise sense of the word -- in forms which enhance the newsreading interlude for the micro-segment.

The key to successful development of electronic micro-newspapers is development of forms consistent with the type of play that characterizes the newsreading interlude. Vital to such

play (at least for audience micro-segments at the "mature" end of the play continuum) is regular and consistent "style" or "form" of presentation. The indexing of information must become part of the subjective play of the newsreading interlude. True ludenic newsreading cannot be transformed into a task-oriented drudgery of data base manipulation and intricate information-recovery protocols, as now required by many videotex systems. To do so is to take newsreading out of the realm of play and into the world of work and task accomplishment. Such systems will attract only non-pleasure readers; mature and pleasure readers will find little communication-pleasure to play with.

Design Implications

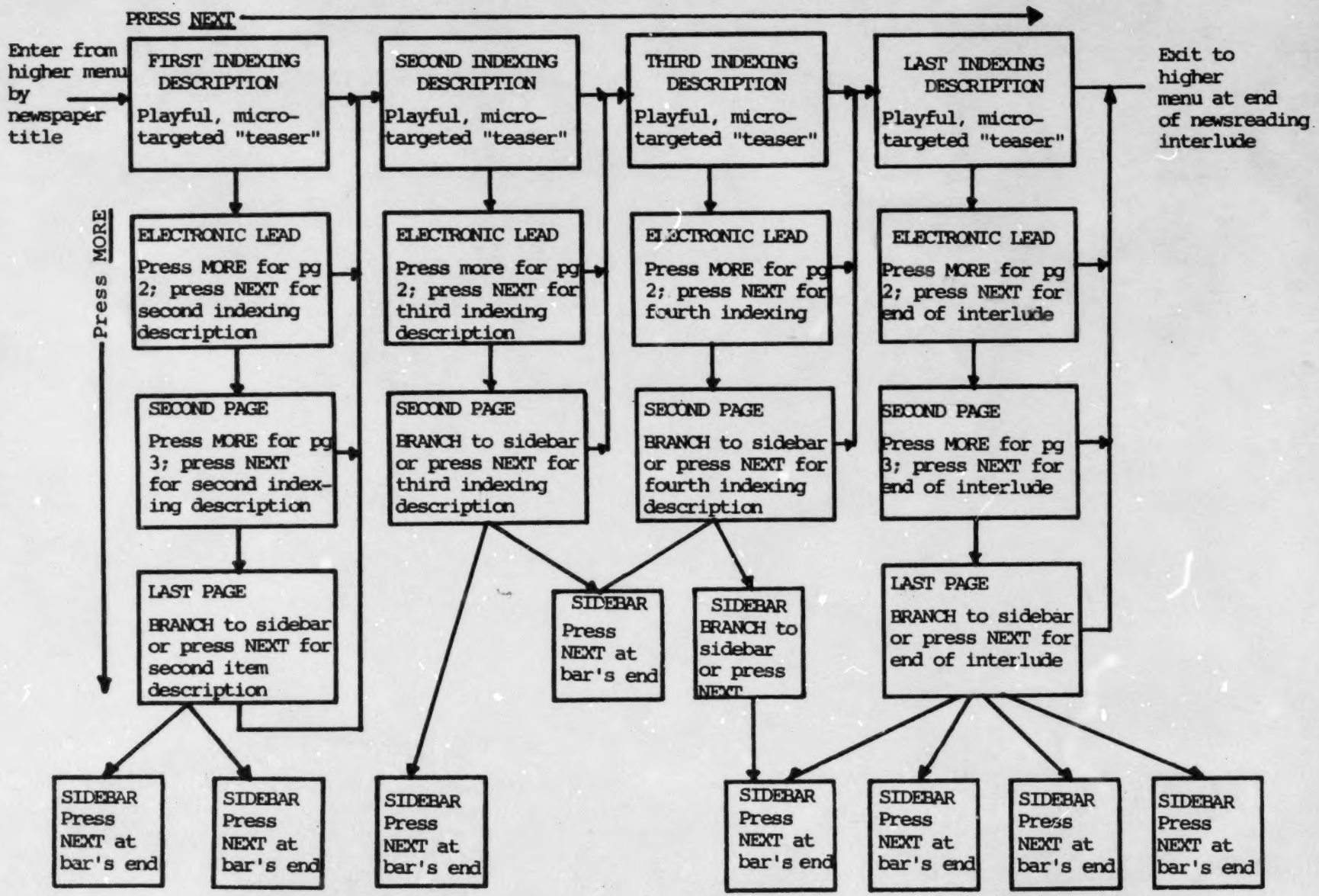
On a practical level, how does one go about designing a ludenic, electronic micro-newspaper? First, one must have a clear idea of the newsreading micro-segment for whom the electronic newspaper is to be edited. [37] Stephenson's "mature" and "pleasure" newsreaders serve as a starting point. As empirical experience grows, Stephenson's theoretical types will be elaborated into increasingly sophisticated "fixes" of key audience micro-segment characteristics. Second, task-oriented, goal-directed menu searches should stop (at least temporarily) with the selection of the micro-newspaper title. Recall that the pulp newspaper has developed a number of conventions that ease the reader into the mass of information it contains, conventions that enhance ludenic play

throughout the news selecting process. Sections, indexes, headlines, subheads, boldface, windows -- all are techniques used to signal or cue the newsreader as to the relative importance, priority, value or meaning of the various pieces of information that make up the newspaper. Such a grammar doesn't currently exist for the electronic newspaper. Nor is it at all sufficient to simply store information in a videotex system in the same form that information takes in a pulp newspaper.[38] Such an approach is akin to a radio newscaster reading the daily newspaper from front page to back. A new medium requires a form of presentation unique unto itself.

Despite the absence of an accepted form and grammar for the electronic micro-newspaper, some basic design principles flow from ludenic newsreading theory. One such extrapolation is the MORE/NEXT strategy for information presentation. In Figure 3, a model for a ludenic electronic newspaper is provided, using the MORE/NEXT strategy for accessing news. The abbreviated screen pages across the top of Figure 3 are similar to the one and two sentence indexing descriptions that many newspapers have adopted.[39] The index descriptions, linked together in a connected electronic chain by the electronic micro-newspaper's editors, provide a highly targeted summary of the day's news as well as serve as indexing "teasers" for additional information about that particular news item. After reading each indexing description, the newsreader is faced with a simple choice: MORE about the same news item or display the NEXT indexing description in the chain. Indexing

Figure 3.

Design for a Ludenic Electronic Newspaper


PRESS NEXT
Enter from higher menu by newspaper title
FIRST INDEXING DESCRIPTION
Playful, micro-targeted "teaser"
SECOND INDEXING DESCRIPTION
Playful, micro-targeted "teaser"
THIRD INDEXING DESCRIPTION
Playful, micro-targeted "teaser"
LAST INDEXING DESCRIPTION
Playful, micro-targeted "teaser"
Exit to higher menu at end of newsreading interlude
Press MORE
ELECTRONIC LEAD
Press MORE for pg 2; press NEXT for second indexing description
ELECTRONIC LEAD
Press more for pg 2; press NEXT for third indexing description
ELECTRONIC LEAD
Press MORE for pg 2; press NEXT for fourth indexing
ELECTRONIC LEAD
Press MORE for pg 2; press NEXT for end of interlude
SECOND PAGE
Press MORE for pg 3; press NEXT for second indexing description
SECOND PAGE
BRANCH to sidebar or press NEXT for third indexing description
SECOND PAGE
BRANCH to sidebar or press NEXT for fourth indexing description
SECOND PAGE
Press MORE for pg 3; press NEXT for end of interlude
LAST PAGE
BRANCH to sidebar or press NEXT for second item description
SIDEBAR
Press NEXT at bar's end
SIDEBAR
BRANCH to sidebar or press NEXT
LAST PAGE
BRANCH to sidebar or press NEXT for end of interlude
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end
SIDEBAR
Press NEXT at bar's end

descriptions should be written in a manner that enhances the ludenic character of the information retrieval process. Rather than a universal "style" for such descriptions, each electronic micro-newspaper would develop styles consistent with characteristics of its newsreader micro-segment which self-selects that newspaper title as his or her own. The number and length of stories to be included in an electronic micro-newspaper would be determined by the characteristics of the self-selecting micro-segments.

If an individual newsreader in the newsreading micro-segment apperceives a story to be especially tied to prior interests, then the MORE function key on the keypad is pressed. The reader moves down through the story, learning more detail with each screen page.[40] What happens at the end of the story? Here a new menu appears. Various electronic "sidebars" related to the main story could be listed by headline or short description ("teaser" indexing descriptions perhaps). This provides the reader an opportunity to pursue an apperceived interest in still greater detail, in convergent selective fashion. As indicated in Figure 3, various sidebars may be accessed from menus at the end of several main **stories**. In addition, sidebars can provide their own menus at the end leading to still more sidebars. When reader interest plays itself out, the NEXT function key is pressed to carry the reader to the next indexing description.

Where does advertising fit into all this? First, micro-segmentation and reduced production and delivery costs may permit some electronic micro-newspapers to be subscriber-supported.

On the other hand, experiences of the specialized magazine industry suggests that advertising takes on special attractiveness to the reader when advertisers appeal to the special characteristics, interests and convergent selective options of a narrow readership. Location of advertising messages in the matrix displayed in Figure 3 will depend on the characteristics of the audience micro-segment.[41]

Testing Theories of Newsreading

The emerging videotex news services are implicit tests of the uses and gratifications perspective, with the assumption that ulterior motives drive the information retrieval tasks. Ludenic newsreading theory suggests that viewing newsreading as a goal-directed information retrieval task ignores the essential communication-pleasure of newsreading <u>as an end in itself</u>. As such, emerging videotex systems -- as presently designed -- stand ready to service work-related tasks of a small non-pleasure elite who need access to news-type data bases to accomplish certain goals and objectives.

Mature and pleasure newsreaders, on the other hand, are not well served by such systems. What ludenic newsreaders require is an <u>edited</u> product, shaped narrowly enough in form and content to permit convergent selective processes to occur <u>through</u> protocols that are <u>pleasureable ends in themselves</u>. The electronic newspaper -- like its pulp predecessor -- must organize the news of the day in a manner which reassures its reader through

its regularity and consistency of style. The electronic newspaper keeps newsreading in the realm of subjective play by taking the work-related and task-related assumptions out of the system design. The ludenic electronic newspaper guides its newsreading micro-segment through the playful steps of reviewing the major events of the day, as those events are apperceived by that micro-segment.

Clearly, the power of the opposing newsreading theories can be tested in an empirical framework through the diffusion of electronic newspapers on commercial videotex systems. By way of rigor, simulations of electronic newspapers on personal computers in an experimental environment may provide useful discoveries. Ludenic and non-ludenic simulations could be compared. Reader uses and reader satisfaction would be key dependent variables. In the final analysis, the usefulness for the electronic newspaper of the ludenic newsreading theory -- as well as the uses and gratifications perspective -- remains an empirical question.[42]

Notes

[1]Many cable systems provide screen frames of wire copy for a preset length of time. The user experience parallels that of TV and radio news consumption. The user is wholly passive and powerless in manipulating the rate and content of the news provided.

[2]Ralph Lowenstein and others, "Videotex and the University: Making the Journalism Connection." Paper presented to the Mass Communication and Society Division Spring Meeting, Atlanta, Georgia, February 27, 1982.

[3]Viewdata systems involve two-way data exchange between the TV receiver (equipped with appropriate keypads or keyboards for data entry) and the central computer system. Data bases are directly accessed through an information request sent through the keypad and TV receiver by the user.

[4]Teletext systems involve one-way transmission of the entire data base on an ongoing, cyclical basis. The receiver "grabs" screen frames or "pages" of information as they are transmitted in the recurring cycle. Narrow-band teletext, using over-the-air transmission of data in the vertical blanking interval of a TV broadcast station, provides limited pages of information. Cable-based teletext, on the other hand, can provide virtually unlimited pages of data. This is achieved through parallel transmission of multiple cycling packets of information.

[5]Edwin Parker, "Technological Change and the Mass Media." Handbook of Communication. I. Pool and W. Schramm, eds. (Chicago: Rand McNally, 1973). Pp. 619-645.

[6]Anthony Smith, Goodbye Gutenberg: The Newspaper Revolution of the 1980's (New York: Oxford University Press, 1980).

[7]Ibid. Pp. 73-134.

[8]Ibid. P. 143.

[9]Ibid. Pp. 139-155.

[10]Alvin Toffler, The Third Wave (New York: Bantem Books, 1981). Pp. 155-165.

[11]The non-portability of the electronic newspaper is not a permanent technical limitation. Rapid advances in liquid crystal displays and "downloading" of data on a periodic basis to microcasettes or microdisk systems may eliminate the portability limitation of the electronic newspaper.

[12]These projects include the ATT/Knight Ridder's Viewtron experiment in Coral Gables, Florida; Cox Cable's INDAX videotex systems in San Diego, Omaha, New Orleans, Tuscon, Macon and Santa Barbara; OCLC's "Channel 2000" experiement with banking services in Columbus, Ohio; and Warner/Amex' QUBE system, a first-generation, cable-based videotex project. There are many others.

[13]This corporate stance is perhaps most clearly articulated by Albert J. Gillen, president of the Viewdata Corp. of America, which operates the Viewtron system in Coral Gables: "Why should we tell others what we've found? We'd like to keep (the results) to ourselves." The Viewtron project has cost over $2 million. See David Rambo, "New Services Stir Variety of Questions on Marketing," Presstime 3 (October 1981). Pp. 24-27.

[14]CompuServe is a national videotex service based in Columbus, Ohio. CompuServe has entered into agreement with the Tandy Corporation to provide videotex services to purchaser's of Radio Shack's TRS-80 personal computers. Radio Shack is a Tandy subsidiary. Figure 2 is from Update (February 1982), a consumer newsletter of the CompuServe Information Service Division. Table 1 is from Today Magazine 1 (July 1981), another publication of the CompuServe Information Service Division, 5000 Arlington Center Blvd., Columbus, Ohio 43220.

[15]ERIC/RCS, "How Many People Know About Your Work?" Brochure of services provided by the ERIC Clearinghouse on Reading and Communication Skills, National Council of Teachers of English, 1111 Kenyon Road, Urbana, Illinois 61801.

[16]Smith, op. cit., pp. 300-318.

[17]The uses and gratifications perspective can be argued to have begun with Schramm's immediate-reward and delayed-reward model of media gratifications. Key to this view is the assumption that media usage and newsreading serve ulterior purposes external to the newsreading process itself. This assumption is the hallmark of the uses and gratifications perspective. Another seminal work is Katz and Foulkes article on media use as escape. See Wilbur Schramm, "The Nature of News" Journalism Quarterly 24 (Fall 1949), p. 359-369; Elihu Katz and David Foulkes, "On the Use of Mass Media as 'Escape': Clarification of a Concept" Public Opinion Quarterly 26 (Fall 1962). Pp. 377-388.

[18]Elihu Katz, Jay Blumler and Michael Gurevitch, "Utilization of Mass Communication by the Individual," The Uses of Mass Communication, J. Blumler and E. Katz, eds, Sage Annual Reviews of Communication Research 3 (Beverly Hills: Sage Publications, 1974). Pp. 19-34.

[19]Ibid. P. 21.

[20]Ibid. See also Leo Bogart, "The Mass Media and the Blue Collar Worker," Blue Collar World: Studies of the American Worker (Englewood Cliffs, New Jersey: Prentice-Hall, 1965).

[21]Recent uses and gratifications research includes Lee Becker, "Measurement of Gratifications," Communication Research 6 (January 1979), pp. 54-73; Mark Levy, "Watching TV News as a Para-Social Interaction," Journal of Broadcasting 23 (Winter, 1979), pp. 69-80; Alan M. Rubin, "What 'Watching 60 Minutes' Means," paper presented to the Mass Communication and Society Division, Association for Education in Journalism Annual Convention, East Lansing, Michigan, August 1981; Alan M. Rubin, "The Interactions of TV Uses and Gratifications," paper presented to the Theory and Methodology Division, Association for Education in Journalism Annual Convention, East Lansing, Michigan, August 1981; J. D. Rayburn and Philip Palmgreen, "Dimensions of Gratifications Sought and Gratifications Obtained: A Study of Good Morning America and Today," paper presented to the Theory and Methodology Division, Association for Education in Journalism Annual Convention, East Lansing, Michigan, August 1981; Robert J. Griffin, "Refining Uses and Gratifications with a Human Information Processing Model," paper presented to the Theory and Methodology Division, Association for Education inJournalism Annual Convention, East Lansing, Michigan, August 1981.

[22]The observation is attributed to Serena Wade, San Jose State University, who served as discussant to the Theory and Methodology Division's special session on uses and gratifications research, Association for Education in Journalism Annual Convention, East Lansing, Michigan, August 1981.

[23]Wayne Towers, "Newspaper Research and a Simplified Approach to Some Uses-and-Gratifications Statements," paper presented to the Speech Communication Association Annual Convention, Mass Communication Division, Louisville, Kentucky, November 1982.

[24]Tsiyonia Peled and Elihu Katz, "Media Functions in Wartime: The Israel Home Front in October 1973," The Uses of Mass Communications, p. 64.

[25]Gerald Stone, "New Technology: Who Will Answer?" paper presented to the Mass Communication and Society Spring Meeting, Association for Education in Journalism, Atlanta, Georgia, February 27, 1982.

[26]William Stephenson, The Play Theory of Mass Communication (Chicago: University of Chicago Press, 1967)

[27]Ibid. P. 157.

[28]Ibid. P. 45.

[29]Ibid.

[30]Ibid. P. 46.

[31]Ibid. P. 150.

[32]Ibid.

[33]Ibid. P. 157.

[34]Ibid.

[35] The failure to apply ludenic newsreading theory to the electronic newspaper -- or pulp newspapers for that matter -- has puzzled other scholars. Logan has theorized that "play as a theory requires too much of a gestalt shift to be 'pleasing' to many scholars and practitioners with other inclinations." See Robert A. Logan, "A Playful Alternative for Newspapers," paper presented to the Mass Communication and Society Spring Meeting, Association for Education in Journalism, Atlanta, Georgia, February 27, 1982.

[36]Stephenson, op. cit. P. 151.

[37]Smith provides an excellent overview of this micro-process in the magazine industry. Smith argues that the newspaper is becoming more like a special interest magazine. See Smith, Goodbye Gutenberg, pp. 135-157.

[38]CompuServe follows such a strategy closely in the storage and retrieval of the many newspaper titles that that videotex system includes.

[39]Perhaps the most playful approach to the use of index descriptions (free form rather than ludenic) is practiced by The San Francisco Chronicle. For example, the March 12, 1982, issue of the paper included the following indexing description "teasers" in the "Top of the News" section above the front page flag:

> "Marlene (Brandy) Baldwin, the convicted madam sent to a nunnery in 1980, has been arrested on new pimping charges. Page 2."
>
> "The Chinese government ordered strict enforcement of its law limiting families to one child. Page 20.

Here's how the same issue indexed a main story and sidebar:

> "John Belushi's widow has a number of questions about his death. Page 5.
>
> "Speedballing" -- the use of heroine and cocaine simultaneously -- is becoming more popular among the well-to-do. Page 5.

[40]The style of writing text for screen display is not a developed form. The screen is limited to about 50-70 words. The reader consciously decides at the end of each screen display to branch to the next page in the sequence or go on to new material in another category. Different styles of writing are likely appropriate to different applications and different readerships.

[41]One ingenious strategy for handling advertising in a communication-pleasure and communication-pain framework allows the reader to skip a screen page of advertising and go on to the next page in the chain. For the reader who calls up the advertising page on the screen, an electronic payment or discount is credited toward the reader's cost of using the videotex service.

[42]The author gratefully acknowledges the technical assistance and observations of Dean Hallford, Department of Recreation, and Wayne Towers, Department of Journalism, San Diego State University.